ARI Research Note 2012-05

U.S. Army Research Institute Unrestricted Publications

Fiscal Year 2011

United States Army Research Institute for the Behavioral and Social Sciences

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U.S. Army Research Institute
for the Behavioral and Social Sciences

Department of the Army
Deputy Chief of Staff, G1

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FOREWORD

The means of dissemination of the results of the U.S. Army Research Institute for the Behavioral and Social Sciences' (ARI) research and development studies and analysis program vary widely depending on the type of research, the subject matter, and the sponsor or proponent. Typically, major findings with immediate policy and procedural implications are briefed to sponsors and proponents in order to enable timely implementation. This is followed up with complete documentation in the form of research and technical publications such as the ones listed here. In many cases, these documents represent the actual item handed off to the sponsor or proponent; this is particularly true of the Research Product category. In other cases, results are published in order to provide a complete record of the research accomplished and for future reference by researchers doing research in the same or similar areas.

This bibliography of ARI FY 2011unrestricted publications, and Research Note 2012-04 (restricted) listing of all ARI FY 2011 publications, provide an idea of both the depth and scope of the ARI research effort, and is a valuable resource for anyone interested in military psychology from either a scientific or operational perspective.

MICHELLE SAMS, PhD.
Director

U.S. Army Research Institute
Unrestricted Publications

Fiscal Year 2011
October 1, 2010 to September 30, 2011

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Introduction

The primary responsibility of the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) is to maximize Soldier effectiveness. ARI accomplishes its mission through research and development in the acquisition, training, utilization, and retention of Army personnel. ARI research and products affect every Army mission with a human performance component.

ARI publishes bibliographies of its technical and research publications as convenient references for qualified agencies, individuals and sponsors. This listing describes reports with unrestricted distribution published during Fiscal Year 2011, October 1, 2010 to September 30, 2011. The abstracts have been written, as far as possible, to describe the principal research findings in non-technical terms; however, technical language is often used to effectively communicate the details of research conducted. The bibliography includes bibliographic citations with abstracts, author indexing, and keywords.

ARI Publications

ARI publications are divided into separate, consecutively numbered categories appropriate to their intended audience and function. Missing report numbers in this bibliography can be found in Research Note 2012-04, *U.S. Army Research Institute Publications*. During fiscal year 2011 the following types of research and technical reports were issued by ARI:

Technical Report (TR). A report of completed research intended primarily for dissemination to researchers.

Research Reports and Technical Reports published by the U.S. Army Research Institute for the Behavioral and Social Sciences are intended for sponsors of research and development (R&D) tasks and for other research and military agencies. Any findings ready for implementation at the time of publication are presented in the last part of the Executive Summary. Upon completion of a major phase of the task, formal recommendations for official action normally are conveyed to appropriate military agencies by briefing or memorandum.

Research Report (RR). A report of completed research intended primarily for dissemination to military managers. Research Reports may deal with policy-related issues but typically do not include specific policy recommendations.

Research Product (RP). A user-oriented report intended to aid Army personnel. Examples are handbooks, manuals, and guidebooks.

Special Report (S). A published report on a topic of special interest or in-house research intended primarily for dissemination to a select audience.

Study Report (SR). A published report briefly documenting studies and analyses.

Study Note (SN). A Study Note may contain or consist of technical text, computer code, diskettes or tapes with software, databases, codebooks or other documentation, raw data, data collection instruments, figures, tables, or any other products that do not concisely convey the import of a project but which must be archived for technical completeness.

Research Note (RN). An interim, or final report typically of limited interest outside of ARI. It is filed with the Defense Technical Information Center (DTIC) but is not printed. Research Notes usually fall into one of the following categories:

- An in-house report that is of limited interest outside of ARI but is considered worth submitting to DTIC to be part of the Department of Defense (DoD) archive of technical documentation.

- An interim or final contract report that is of limited interest outside of ARI but must be submitted to DTIC in accordance with Department of the Army regulations to close a contract.

- Material related to a Research Report or Technical Report (detailed tables, graphs, charts, sample forms, and sample training and testing materials) published as a Research Note to economize on printing and distribution.

Contractor Report (CR). An interim, or final report by a contractor that meets contractual obligations but is not defined by the other report categories.

ARI Distribution Policy

Initial distribution of these publications is made directly by ARI. Research Reports, Technical Reports, Study Reports, and Research Products are distributed primarily to operational and research facilities and their sponsors in DoD, to other interested Government agencies, and to DTIC. Research Notes, Study Notes, and Contractor Reports are filed with DTIC but are not published or distributed.

Accessing ARI Publications

ARI publications are not available directly from ARI. The reports listed in this bibliography can be obtained from the following sources.

- Link to the report using the URL following the abstracts.

- Access reports at http://www.dtic.mil, using the DTIC accession number (i.e., the ADA number) listed in the citation of the report.

- Reports are also available from the National Technical Information Service (NTIS).

NTIS homepage: http://www.ntis.gov
To place orders for products use orders@ntis.gov
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NTIS physical address:
U.S. Department of Commerce
National Technical Information Service
5301 Shawnee Road
Alexandria, VA 22312

Special Reports

S 69
U.S. Army Research Institute Program in Basic Research - FY 2010
Basic Research Unit. November 2010. (ADA532364)

This document contains detailed summaries for each of the U.S. Army Research Institute's basic research contracts for the fiscal year 2010. These summaries are grouped according to four Basic Research Unit program objectives: providing fundamental knowledge to improve training in complex environments; providing fundamental knowledge to improving leader and team performance; providing fundamental knowledge for identifying and measuring the attributes and skills that are critical to Soldier recruiting, assignment, performance, and retention in the transforming Army; and providing fundamental knowledge for organizational behavior and network science research. In addition to summarizing what was done or is being done, each summary describes the contributions of that research effort to basic behavioral science and suggests how the findings might benefit the Army and other military services. http://handle.dtic.mil/100.2/ADA532364

KEYWORDS: training, leadership, team performance, assessment, adaptability, motivation, social networks, work behavior, network science

S 70
Select for Success: A Toolset for Enhancing Soldier Accessioning
Tonia S. Heffner, Roy Campbell, & Fritz Drasgow. March 2011. (ADA554057)

The Army needs the best personnel available to meet the emerging demands of the 21st Century. Accordingly, the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) is conducting research to support implementing non-cognitive predictor measures (e.g., interests, values, temperament) to enhance entry-level Soldier selection and classification decisions. Based on this research, Army leadership has approved an operational test and evaluation (IOT&E) of the *Tailored Adaptive Personality Assessment System (TAPAS)* to supplement the *Armed Services Vocational Aptitude Battery (ASVAB)* in evaluating applicants for selection into the Army. This report provides background to the TOPS IOT&E and discusses how this initiative represents a significant improvement in the way the Army accesses new Soldiers. http://handle.dtic.mil/100.2/ADA554057

KEYWORDS: behavioral and social science, personnel, criterion-related validation, selection and classification, manpower

Technical Reports

TR 1273
Input Device Characteristics Contribute to Performance during Training to Operate a Simulated Micro-Unmanned Aerial Vehicle
Deborah R. Billings, & Paula J. Durlach. October 2010. (ADA531635)

Our previous research demonstrated that for teleoperation of a simulated micro-unmanned aerial vehicle (MAV), flight skill missions were completed faster using a game controller than a mouse as the input device (Billings & Durlach, 2008; Durlach, Neumann, & Billings, 2008). The present experiment examined three factors that may have led to this advantage: attention (focused vs. divided), control of vehicle speed (user controlled vs. system), and movement ability (one direction vs. multiple directions at a time). Fifty participants were randomly assigned to one of five input device configurations and underwent operator training, which included simulated flight skill and reconnaissance missions in two synthetic environments. Movement in multiple directions yielded significantly faster mission completion than single direction movement in flight skill missions. User-controlled speed yielded significantly faster mission completion in reconnaissance missions. The attentional manipulation failed to influence performance. Workload was rated lowest when the user had focused attention, control of speed, and multiple directions of movement simultaneously. The results suggest that various features of the input device contribute differently to performance and perceived workload, depending on the required task, and demonstrate the importance of matching input device characteristics to task characteristics for human-computer interaction.
http://handle.dtic.mil/100.2/ADA531635

KEYWORDS: remote control, human-robot interaction, input controls, robotic control, teleoperation

TR 1274 - Canceled

TR 1275
Self-Initiated Development of Leadership Capabilities: Toward Establishing the Validity of Key Motivational Constructs and Assessment Tools
Todd J. Maurer, & Michael Lippstreu. November 2010. (ADA532359)

To meet the transformation objectives of the United States Army over the coming decades, the Army must have leaders or potential leaders who continuously pursue development of leadership skills, and who are flexible and adaptable through their involvement in self-initiated development and learning experiences. A key first step in this process is to develop constructs and assessment methods, including a network of related constructs, that would help establish construct validity. In this vein, the goal of this basic research was to initiate development of new constructs and assessment methods that are central to the process of motivating leadership development. The motivation to develop leadership constructs measured in this research is conceptually and

empirically distinguishable from other relevant constructs and provides utility above and beyond other existing constructs in relation to leadership development behavior and career success. The Army might explore the use of these measures as diagnostic tools prior to investing in leadership development. To the extent that these measures predict effectiveness in adapting to leadership roles or learning and developing necessary skills, these tools might be used in selection and placement within the Army. http://handle.dtic.mil/100.2/ADA532359

KEYWORDS: self-efficacy, motivation to develop leadership, motivation to lead, improvability, construct validity

TR 1276
Measuring Cross-Cultural Competence in Soldiers and Cadets: A Comparison of Existing Measures
Allison Abbe, David S. Geller, & Stacy L. Everett. November 2010. (ADA533441)

Assessment tools are needed to support efforts to train and develop cultural capabilities in Soldiers and other military personnel. The Army and other Services have implemented training and education programs to develop cultural capabilities in military personnel; however, methods and tools to assess cultural learning are lacking. The goal of the present research was to identify metrics developed to assess cross-cultural competence and related constructs in non-military populations and to compare them in an Army sample. Cadets at the U.S. Military Academy and active-duty Soldiers completed the Cultural Intelligence Scale, the Multicultural Personality Questionnaire and the Intercultural Development Inventory. Results showed substantial convergence among the three measures, as well as correlations with biographical variables previously linked with cross-cultural competence. Results also indicated that officers have higher levels of intercultural development and traits than NCOs. Current findings and past research suggest that the MPQ shows promise for predicting intercultural performance; however, due to our sample, we were unable to examine the measure's structure. Future research should examine the extent to which these traits can be influenced through training and other developmental interventions. Future research into the assessment of cross-cultural competence should also explore alternatives to self-report measures. http://handle.dtic.mil/100.2/ADA533441

KEYWORDS: cross-cultural competence, cultural understanding, cultural intelligence

TR 1277
Assessing the Development of Cross-Cultural Competence in Soldiers
Michael J. McCloskey, Aniko Grandjean, Kyle J. Behymer, & Karol Ross. November 2010. (ADA533959)

The contemporary operational environment is often characterized by ambiguous, multi-cultural contexts, where Army Soldiers must rapidly adapt without extensive prior knowledge of a region or its people. Ongoing training development efforts are addressing the need for general cross-cultural competence, but this broad competence must be clearly defined and assessed in order to determine if Soldiers are being

adequately prepared. To support this goal, this research effort examined how cross-cultural competence develops in Soldiers, and how that competence supports mission success. Using multiple methodologies, including cognitive task analysis, critical incident elicitation, and review of existing models, we developed a model of cross-cultural competence that includes 28 knowledge, skills, attitudes and abilities (KSAAs) over four levels of development. This model will inform the development of metrics to assess Soldiers' cross-cultural competence and provide relevant feedback. http://handle.dtic.mil/100.2/ADA533959

KEYWORDS: cross-cultural competence, cultural awareness, cultural understanding, perspective taking, interpersonal skills

TR 1278
A Developmental Model of Cross-Cultural Competence at the Tactical Level
Michael J. McCloskey, Kyle J. Behymer, Elizabeth Lerner Papautsky, Karol G. Ross, & Allison Abbe. November 2010. (ADA534118)

Non-kinetic engagements in multi-cultural settings are becoming the norm for deployed Soldiers, and the ability to operate effectively within these environments is critical to mission success. Soldiers must be able to rapidly adapt to unfamiliar surroundings without extensive prior knowledge of the region or its people. Ongoing training development efforts are addressing the need for general cross-cultural competence (3C). To support these efforts, this research aimed to identify the critical components of 3C and describe how 3C develops in Soldiers. Five components of 3C were identified: Cultural Maturity, Cognitive Flexibility, Cultural Knowledge, Cultural Acuity, and Interpersonal Skills. These components and their corresponding KSAAs were used in identifying four levels of 3C development: Pre-Competent, Beginner, Intermediate, and Advanced. This model establishes a foundation from which to create an online tool that measures competence of an individual Soldier and provides feedback to support improvement. The tool may also be useful for evaluating the effectiveness of cross-cultural training initiatives. This model is specifically focused on understanding tactical level operations, but can be customized for applications across domains, both within and outside military settings. http://handle.dtic.mil/100.2/ADA534118

KEYWORDS: cross-cultural competence, cultural awareness, cultural understanding, perspective taking, interpersonal skills

TR 1279
Developing Intercultural Adaptability in the Warfighter: A Workshop on Cultural Training and Education
Allison Abbe, & Rebecca Bortnick. November 2010. (ADA533997)

From humanitarian relief operations to counter-insurgency operations in Iraq and Afghanistan, culture has emerged as a central consideration for both general-purpose forces and specialists. Cultural training and education can provide the capabilities needed to confront the cultural complexity characteristic of the current and future missions. A two-day workshop focused on the instructional design process as applied to

the development of cultural training and education. Participants were approximately 130 representatives from government, industry, and academia who are actively involved in planning, developing, or delivering cultural training and education or in conducting research in those areas. Research gaps needing further investment were identified in six primary areas: cultural performance requirements analysis, learner motivation and development, development and validation of instructional sociocultural content, flexible instructional solutions, methods and metrics for training evaluation, and continuing opportunities for exchange and collaboration. These findings can inform future directions for research programs and force development efforts for sociocultural capabilities. http://handle.dtic.mil/100.2/ADA533997

KEYWORDS: cultural training, cultural understanding, cultural capabilities, cross-cultural competence

TR 1280
Understanding and Managing the Career Continuance of Enlisted Soldiers
Mark C. Young, U. Christean Kubisiak, Peter J. Legree, & Trueman R. Tremble (Eds.). December 2010. (ADA538015)

The U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) implemented a large research program titled "STAY: Strategies to Enhance Retention." The enlisted portion of the STAY project identified factors influencing enlisted Soldiers' career continuance decisions, developed a model of the decision process, generated an extensive list of attrition and retention interventions, and evaluated two of them. Interviews and focus groups across Training and Doctrine Command (TRADOC) and Forces Command (FORSCOM) were conducted during FY06 and FY07 to identify factors influential to both enlisted attrition and retention. The FY06 Trainee Inventory and Soldier Inventory were developed and administered to further inform model development. The resulting career continuance model for enlisted Soldiers accounted for growth and development of Soldiers, influential experiences, individual characteristics, and Family and organizational influences; it also drove the intervention development. A multi-phase process was used to develop and pilot-test interventions for decreasing attrition and improving enlisted Soldier career continuance. Promising interventions were identified based on feedback from ARI and Subject Matter Expert (SME) advisory panels on feasibility and potential success. Two interventions (*Soldier Transition Survey* and *Unit Retention Climate Feedback System*) were further investigated. The *Soldier Transition Survey* provided useful empirical information on factors driving career continuance decisions and demonstrated the value of alternate sources (i.e., proxies) for capturing this information. The *Unit Retention Climate Feedback System* examined shared unit-level perceptions influencing decisions to reenlist or leave the Active Army, and provides an approach for feeding that information back to unit leaders. http://handle.dtic.mil/100.2/ADA538015

KEYWORDS: project STAY, Army enlisted retention, reenlistment, Army attrition, career continuance

TR 1281
Knowledge, Skills, and Abilities for Military Leader Influence
Michelle Wisecarver, Rob Schneider, Hannah Foldes, Michael Cullen, & Michelle Ramsden Zbylut. March 2011. (ADA540059)

Military leaders must effectively use influence across a variety of contexts and people. This report provides a comprehensive review of leader influence strategies and the factors that impact the influence process and influence outcomes. A detailed description is provided of the knowledge, skills, abilities, and other characteristics (KSAOs) related to successful influence, and measures currently available for these KSAOs are presented. This report also discusses the usefulness of different measurement approaches for the 64 identified KSAOs. Finally, training needs and approaches to develop a leader's influence KSAOs are discussed. http://handle.dtic.mil/100.2/ADA540059

KEYWORDS: influence, persuasion, leadership, interpersonal skills, leader development

TR 1282
Assessment of Assembling Objects (AO) for Improving Predictive Performance of the Armed Forces Qualification Test
Lance Anderson, Richard Hoffman, BrianTate, Jessica Jenkins, Carolyn Parish, Alicia Stachowski, & J. Douglas Dressel. April 2011. (ADA542559)

The purpose of this investigation was to examine whether the Assembling Objects test (AO) should be added to the AFQT predictor composite. The investigation included a literature review and analysis of data from Army Classification project. Analyses included regressions with 20 different criteria, subgroup analyses, and bias analyses. Findings suggest that the Army should consider including the AO subtest in the AFQT predictor composite. Adding the AO subtest to the AFQT composite would likely increase the prediction of performance and job knowledge, while potentially decreasing the subgroup predictor differences between Hispanic and white subgroups. Although adding the AO subtest to the AFQT composite may increase the subgroup predictor differences of female and black subgroups relative to their respective majority comparison groups, results suggest that any additional subgroup differences would be borne out in performance differences, and that the revised AFQT composite would thus be fair and unbiased to minority groups. Future research should examine the degree to which these findings differ across job clusters, where cluster members are similar in terms of abilities needed to perform the work. http://handle.dtic.mil/100.2/ADA542559

KEYWORDS: assembling objects, Armed Forces Qualifying Test (AFQT), performance, prediction, test, spatial ability

TR 1283

Tier One Performance Screen Initial Operational Test and Evaluation: Early Results

Deirdre J. Knapp, Tonia S. Heffner, & Leonard White (Eds.). April 2011. (ADA544437)

Along with educational, medical, and moral screens, the U.S. Army uses a composite score from the Armed Services Vocational Aptitude Battery (ASVAB), the Armed Forces Qualification Test (AFQT) to select new Soldiers. Although the AFQT is useful for selecting new Soldiers, other personal attributes are important to Soldier performance and retention. Based on the U.S. Army Research Institute's (ARI) investigations, the Army selected one promising measure, the Tailored Adaptive Personality Assessment System (TAPAS), for an initial operational test and evaluation (IOT&E), beginning administration to applicants in 2009. Criterion data are being collected at 6-month intervals from administrative records, from Initial Military Training (IMT), and from schools for eight military occupational specialties (MOS) and will be followed by two waves of data collection from Soldiers at first unit of assignment. This is the first of six planned evaluations of the IOT&E. This report documents the early analyses from a small sample of Soldiers who completed the TAPAS and completed IMT. Similar to prior experimental research, our early evaluation suggests that several TAPAS scales significantly predicted a number of criteria of interest, indicating that the measure holds promise for both selection and classification purposes. http://handle.dtic.mil/100.2/ADA544437

KEYWORDS: personnel, manpower, selection and classification

TR 1284

Training, Developing, and Assessing Cross-Cultural Competence in Military Personnel

Paula Caligiuri, Ray Noe, Riall Nolan, Ann Marie Ryan, & Fritz Drasgow. (April 2011). (ADA533959)

This report provides information and recommendations regarding how the Army might train, develop and assess cross-cultural competence of Soldiers. Findings are presented in four main sections. The first section discusses the importance of cross-cultural competence to mission accomplishment and describes two facets of cross-cultural competence: cultural learning and cultural agility. Next, methods for developing and sustaining these facets are provided. These methods include an overall learning system that blurs the lines between operational and institutional learning experiences, as well as more specific techniques and practices for cultural learning and cultural agility. The third section discusses the importance of assessing cross-cultural competence and addresses the questions of *who* and *what* should be assessed and *how* assessments might be conducted. The final section of the report summarizes recommendations regarding training, development, and assessment and highlights key resource needs, anticipated challenges, and next steps.
http://handle.dtic.mil/100.2/ADA533959

KEYWORDS: cross-cultural competence, cross-cultural competence training, cross-cultural competence development, cross-cultural competence assessment, cultural intelligence, cultural learning, cultural agility

TR 1285
Virtual Environments for Soldier Training via Editable Demonstrations (VESTED)
Michael Szczepkowski, Thomas Santarelli, Kevin Stagl, Floyd Glenn, & John Paulus. April 2011. (ADA 542583)

While demonstrations are recognized as an effective tool to train key Army relevant skills, there is little detailed guidance on how to generate and present effective demonstrations. CHI Systems created a demonstration authoring tool, called the Virtual Environments for Soldier Training via Editable Demonstrations (VESTED), which guides an author through a demonstration creation process to select the specific learning goals to be demonstrated and to construct storyboards depicting the underlying behaviors, cognitive decisions and tasks being demonstrated. VESTED also aids the author in making the decisions about where and how to use the virtual environment (VE) medium and all of the other relevant authoring tools. The use of VESTED should reduce instructor workload and improve instructor efficiency by reducing the cost of developing demonstrations and permitting demonstrations to be executed on a wide-variety of affordable computer hardware. http://handle.dtic.mil/100.2/ADA542583

KEYWORDS: virtual environment, training, demonstrations, guidelines, game-based training, instructional design

TR 1286; See ARI RN 2012-04

TR 1287
Feedback in Videogame-based Adaptive Training
Iris D. Rivera. May 2011. (ADA544082)

The field of training has been changing rapidly due to advances in technology such as videogame-based adaptive training. Videogame-based adaptive training has provided flexibility and adaptability for training in cost-effective ways. While this method of training may have many benefits for the trainee, current research has not kept up to pace with its implementation. This research closes this gap by testing four competing feedback and training theories. The ACT-R theory and the feedback intervention theory provide different recommendations for the frequency (frequent or infrequent) that feedback should be provided during training. Self-efficacy theory and control theory provide different recommendations for the appropriate feedback sign (positive or negative) that should be provided during training. Research was conducted in which the frequency of feedback and feedback sign were manipulated in a videogame-based adaptive training environment. MANOVA results indicate that frequent negative feedback and infrequent positive feedback were beneficial to trainee performance. The role of feedback orientation was also examined as a moderator of the relationship between feedback and performance, but was not supported. The findings serve as a

framework for practitioners in determining the necessary type of feedback needed when designing videogame-based adaptive training. http://handle.dtic.mil/100.2/ADA544082

KEYWORDS: interpersonal skills, Army training, videogame-based training, adaptive training, scenario-based training, VECTOR

TR 1288
A Framework for Understanding Collective Leadership: The Selective Utilization of Leader and Team Expertise within Networks
Tamara L. Friedrich, William B. Vessey, Matthew J. Schuelke, Gregory A. Ruark, & Michael D. Mumford. May 2011. (ADA544438)

To date, the dominant approach to leadership research assumes that all aspects of the leadership role within a team are embodied by a single individual. In the real world, however, this is rarely the case. Rather, multiple individuals within the team may serve as leaders in both formal and informal capacities, and the shifting of leadership responsibilities is often rooted in which individual's expertise is most relevant to the given problem. In the present effort, we add to the rapidly growing body of work that focuses on the distribution of the leadership role among multiple individuals. We have reviewed relevant extant literature and proposed an integrated framework for understanding the collective leadership process. Also, in developing this framework we have taken an information and expertise-based approach such that we propose that collective leadership, or the distribution of the leadership role, is a function of selectively utilizing the information or specialized expertise that individuals within the network possess. In reviewing the framework, 55 propositions with regard to the collective leadership process are outlined and suggestions for future research are provided. http://handle.dtic.mil/100.2/ADA544438

KEYWORDS: leadership, social networks, adaptability, team performance

TR 1289
Developing Collective Training for Small Unmanned Aerial Systems Employment: Workload and Performance with Multiple Systems
Heather A. Priest, Paula. J. Durlach, & Deborah R. Billings. June 2011. (ADA544540)

A research simulation environment was developed to investigate training issues concerning employment of small unmanned aerial systems (SUAS) at company and below. The research environment enables simulated platoon missions in a virtual environment in which mounted or dismounted Soldiers control avatars. A person designated as SUAS operator also has the ability to operate a SUAS in the virtual environment. Another person designated as the commander has a command and control tool (C2node), which allows communication and coordination with the SUAS operator (e.g., text messages, mission plans, sensor imagery). Both the operator's control station and the C2node are configurable, to allow investigation of how different features (e.g., providing the C2node with streaming video vs. not) affect mission synchronization and maintenance of a common operational picture. Besides human-controlled avatars, the environment also allows for artificially intelligent non-player characters (NPCs), whose

behavior can be scripted via a system of relatively-user friendly menus, prior to a scenario exercise. Experimenters can also take manual control of these NPCs during an exercise. This report describes the capabilities of the environment and an initial experiment providing evidence that users can operate the C2node and an avatar at the same time. The potential for future research application is also discussed.
http://handle.dtic.mil/100.2/ADA544540

KEYWORDS: unmanned aerial systems, simulation based training, operator control unit, command and control station, artificially intelligent non-player characters, usability, workload

TR 1290
Current Practice and Theoretical Foundations of the After Action Review
Thomas Mastaglio, Jeffery Wilkinson, Phillip N. Jones, James P. Bliss, & John S. Barnett. June 2011. (ADA544543)

This report presents a research effort to investigate After Action Review (AAR) practices, relevant science-based principles and theories, and develop actionable conclusions. The effort investigated theoretical foundations, doctrinal guidance, and the perceptions of Army personnel regarding the importance of AAR to training effectiveness. The key findings from this research show that AAR is a fundamental part of the Army training culture with recognized value at the trainer and trainee level. A reference model, the Integrated Theory of AAR (ITAAR) is described together with educational and information dissemination recommendations that will strengthen Army-wide expertise and enhance the practice of AAR as a key methodology for supporting the training process. http://handle.dtic.mil/100.2/ADA544543

KEYWORDS: After Action Review (AAR), training, feedback

TR 1291
Training Tactical-Level Planning Skills: An Investigation of Problem-Centered and Direct Instruction Approaches
Jennifer S. Tucker, Robert P. Semmen, Jason Sidman, Alexandra Geyer, & E. Daly Vaughn. June 2011. (ADA545362)

The purpose of the present research was to inform training developers of the instructional approaches that are most effective in achieving cognitive skill proficiency for problem-based, decision-making/analyzing tasks. Prototype training modules were developed and used in experiments to determine the effects of three different instructional approaches [inquiry-based learning (IBL), direct instruction (DI), and the Invention Framework (IF)] on student outcomes. However, due to the small sample sizes across the three experiments, the results of this research should be considered a pilot effort. Therefore, the contribution of the research is best reflected in the reporting of the instructional design and methodology of each approach as well as an indication of the advantages and disadvantages of using these approaches for US Army training. Further research is needed to determine the validity of the approaches for training a range of tasks under various training and transfer conditions. Future research should draw from the

training presented here and develop additional exemplars of each approach that can be further demonstrated and evaluated. The software for the IF approach and full slide packets for the DI and IBL approaches are freely available by contacting the first author of this report at the above address. http://handle.dtic.mil/100.2/ADA545362

KEYWORDS: problem-centered learning, inquiry based learning, invention framework, direct instruction, training, tactical-level planning, cognitive skill, junior officers

TR 1292; See ARI RN 2012-04

TR 1293; See ARI RN 2012-04

TR 1294
Guidelines and Tools for VBS2 Mission After Action Reviews: Development and Evaluation
Richard Topolski, Chris Green, Bruce Leibrecht, & Nicole Rossi. July 2011. (ADA548307)

This report documents the creation and evaluation of a guide designed to assist facilitators who conduct after action reviews (AAR) of missions executed using the Virtual Battlespace-2 (VBS2) game. Observations of course-related exercises suggest there is a clear need for the guide. The results of the formative evaluation and an exploratory investigation indicate the guide meets the need. The guide is available as a stand-alone document in ARI Research Product 2011-09, *After Action Review Guide for Trainers of Virtual Battlespace-2 Missions*. It is also a valuable addition to the *Soldiers' Toolbox for Developing Tactics, Techniques, and Procedures,* ARI Research Product 2011-08, that resulted from earlier research. The results of the exploratory investigation strongly suggest that effectively employing VBS2 AAR capabilities is a key factor in engendering "buy-in" for simulation-based training among facilitators and Soldiers. The report includes lessons learned and recommendations for disseminating and utilizing the guide. http://handle.dtic.mil/100.2/ADA548307

KEYWORDS: game-based training, After Action Review (AAR), Virtual Battlespace-2, instructional methodology, desktop simulations, training technology, training effectiveness

TR 1295
Army Officer Job Analysis: Identifying Performance Requirements to Inform Officer Selection and Assignment
Cheryl Paullin, Andrea L. Sinclair, Karen O. Moriarty, Nicholas L. Vasilopoulos, Roy C. Campbell, & Teresa L. Russell. August 2011. (ADA548872)

This report includes lists of leadership and technical duties performed by all Army officers and the skills, abilities, and other characteristics (SAOs) required to perform those duties. It also includes draft lists of branch-specific technical duties for entry-level officer positions in five branches: Armor, Infantry, Signal, Quartermaster, and Transportation. We developed draft lists based on existing Army doctrine and past studies of officer

competencies and duty requirements, supplemented by the civilian leadership literature, research on Army enlisted jobs, and research on attributes related to retention. The lists were vetted by Army officers in several positions (platoon leader, company commander, battalion XO, battalion S3, and battalion commander), although there were very few reviewers from higher-ranking positions. We could not fully delineate branch-specific technical duties due to the lack of current documentation and difficulty accessing officers as subject matter experts. As a consequence, additional research and significant input from Army officers would be required to fully delineate branch-specific requirements for the Signal, Quartermaster, and Transportation branches. However, detailed specification of branch-specific technical requirements is not necessary to support development of predictor and criterion measures for use in entry-level selection and initial officer assignment. http://handle.dtic.mil/100.2/ADA548872

KEYWORDS: job analysis, officer performance requirements, officer skill requirements

Research Reports

RR 1932
Enhancing Perception in Ethical Decision Making: A Method to Address Ill-Defined Training Domains
Thomas Rhett Graves, Robert J. Pleban, and Marisa L. Miller, LTC Jack V. Branciforte, Aram M. Donigian, Vanessa Johnson, & Michael D. Matthews. October 2010. (ADA530670)

A mixed-method research approach was developed to address description, definition, and measurement in ill-defined training domains. A series of research efforts were conducted to demonstrate the approach and assess its viability. The ill-defined domain that served as the vehicle for this effort was the sense-making (perceptual and interpretive) process of the ethical decision making experience among United States Military Academy Cadets. Here, we empirically derived a thematic model of the ethical decision making experience based on a sample of written accounts. Using the thematic model, the Ethical Perceptions Scale (EPS) was developed to measure individual and group perceptual/interpretive preferences for ethical decision making with respect to military specific ethical dilemmas. A confirmatory factor analysis supported that the Ethical Perception Scale is measuring in accord with the thematic model. We also tested the reliability and construct validity of the scale; reliability was good and construct validity indicated that the scale measures in the correct conceptual domain. The model and scale are applicable to Professional Military Ethics training for Officer Cadets and newly commissioned junior officers to cover ROTC, OCS, and USMA. The research method demonstrated may be applied to address other ill-defined domains in Army, and other, research and training contexts. http://handle.dtic.mil/100.2/ADA530670

KEYWORDS: professional military ethics, assessment and training development, decision making, qualitative methods, ethical perceptions scale (EPS), thematic model, ill-defined domains

RR 1933
Training Methods to Build Human Terrain Mapping Skills
Laura A. Zimmerman, Jeff M. Sestokas, James A. Bell, David R. Manning, & William R. Sanders. October 2010. (ADA532276)

A key to success in counterinsurgency operations involves finding ways to identify the insurgents within the population. Success will likely require that Soldiers develop the cultural and information gathering skills necessary to develop a detailed knowledge of the “human terrain” in their area of operations. This report documents research conducted to develop Human Terrain Mapping (HTM) skills for Soldiers, where HTM is an overarching concept that refers to methods and tools used to systematically collect and catalog social and ethnographic information. Given the rapidly changing nature of current conflicts, the research effort sought to gather HTM training requirements and tactics, techniques, and procedures (TTP) from members of an intact unit that had worked together performing the HTM functions in a recent deployment. Sixteen Soldiers from a recently deployed brigade were interviewed to identify the TTP they

used to accomplish HTM tasks. Based on the interview findings a training product was developed that demonstrates methods and tools for building an understanding of the HTM process, specific information elicitation techniques, and Soldier observation skills. http://handle.dtic.mil/100.2/ADA532276

KEYWORDS: human terrain, counterinsurgency, innovative training, cognitive skills, soldier competencies, human performance

RR 1934
Augmented performance environment for enhancing interagency coordination in stability, security, transition, and reconstruction (SSTR) operations: Phase II
Anna T. Cianciolo, & Arwen Hunter DeCostanza. December 2010. (ADA535463)

Report development under a Small Business Innovative Research Program, Phase II. Phase I research explored the implications of organizational culture for planning interagency stability, security, transition, and reconstruction operations at the field level. Specifically, planning deficits were identified, their roots in organizational differences investigated, and a proof of concept training system prototype was developed. In Phase II, effort was devoted to refining the design and fully implementing the concept in a deployable prototype training system, called the Interagency Consensus Forum (ICF). The ICF Phase II prototype is an instructorless web-based training system designed to foster the development of the foundational consensus building knowledge and skills necessary for successful, integrated civil-military planning. To the extent possible given limited access to the ICF target user audience, all training was designed and implemented via an iterative design-test-refine process. A key design challenge was the development of distributed, collaborative multiparty negotiation role-play exercises, which represent the first of their kind in Army training. The ICF training complements related ARI-supported efforts to promote generalizable interpersonal knowledge and skill, including leader influence and negotiation. Further research and development will enhance the ICF's outreach and training effectiveness.
http://handle.dtic.mil/100.2/ADA535463

KEYWORDS: Interagency coordination, SSTR operations, negotiation, consensus building, computer-based training, collaboration

RR 1935
The Impact of Accelerated Promotion Rates on Drill Sergeant Performance
Marisa L. Miller, David R. James, & M. Glenn Cobb. January 2011. (ADA535379)

This effort investigated if accelerated promotions have outpaced the ability of noncommissioned officers (NCOs) to gain the depth and breadth of experience and maturity needed to meet the challenges confronting today's Drill Sergeants (DSs) and Drill Sergeant Leaders (DSLs). This research focused on differences in NCO training and Army experiences, personality and demographic characteristics, and performance as a DS as rated by peers, leaders, and themselves. DSs, Company Commanders, and First Sergeants from 31 basic training Companies participated. This effort was also extended to the Drill Sergeant School in order to determine the impact of promotion

timing on DSL performance. Results indicate that few differences exist between accelerated and nonaccelerated promotion NCOs and these few differences generally reflect favorably on accelerated promotion DSs and DSLs. Moreover, these differences were more easily predicted by other characteristics, such as age, rank, and MOS division, than promotion timing. Recommendations for improving DS training are discussed. http://handle.dtic.mil/100.2/ADA535379

KEYWORDS: Drill Sergeants, NCO promotion, accelerated officer promotions, Tailored Adaptive Personality Assessment System (TAPAS)

RR 1936
Problem-Based Learning: Instructor Characteristics, Competencies, and Professional Development
Anna T. Cianciolo, Jeff Grover, William R. Bickley, & David Manning. January 2011. (ADA535416)

Preparing Soldiers to learn from problem-solving experiences requires that Army instructional practices become more responsive to individual student need, better attuned to operational requirements, and more representative of social learning contexts. To help instructors achieve this goal, the principles for facilitating problem-based learning must be investigated and their implications for professional development explicated. In this research, the instructor characteristics and competencies required to implement problem-based learning were explored. Techniques for instructor professional development in civilian and military contexts then were examined to identify best practices. The Army environment was assessed for its readiness to employ these best practices, and recommendations were developed. The findings suggest that the Army environment partially supports the development of problem-based learning facilitators. Recommendations emphasize transforming basic instructor preparation to be more outcomes-based and student-centered given the time, personnel, and resource constraints of the current Army environment. Ultimately, a comprehensive preparatory approach is needed that targets all implementers of Army education.
http://handle.dtic.mil/100.2/ADA535416

KEYWORDS: problem based learning, instructor training, train the trainer, Army Learning Concept, adult education, student centered learning

RR 1937
Retention of Digital Skills: Command Post of the Future
Martin L. Bink, Richard L. Wampler, & Evelyn Cage. January 2011. (ADA535536)

The new generation of Army command-post digital systems, e.g., Command Post of the Future (CPOF), increasingly utilizes non-linear interfaces. Non-linear interfaces use a customizable workspace that is based on the user's needs rather than a static data format, and interaction with the interface is not based on prescribed or hierarchical sequences of steps. These characteristics of CPOF as well as the type of training typically received on the system suggested that CPOF skills should be susceptible to retention loss. This paper describes the results of a CPOF-skill retention experiment.

Thirty-six Soldiers from CPOF training at two battle command training centers completed a skills test immediately following training and again five weeks after training. Although retention of CPOF skills was fairly robust, differences among the patterns of individual-skill retention were found. In addition, differences were found in CPOF-skill retention across types of skills. The pattern of retention was then used to identify the specific skills and the progression of skills that are critical in developing CPOF expertise. http://handle.dtic.mil/100.2/ADA535536

KEYWORDS: stability operations, joint Interagency, Intergovernmental and multinational training, training themes

RR 1938
Evaluating a Problem-Based Learning Strategy for Enhancing Ethical Awareness in Negotiation
Robert J. Pleban, Thomas Rhett Graves, Marisa L. Miller, Aram M. Donigian, LTC Jack V. Branciforte, & Michael D. Matthews. January 2011. (ADA535714)

A problem-based learning strategy (Bransford & Schwartz, 1998) was used to develop a training protocol to enhance U.S. Military Academy (USMA) Cadets' awareness of ethical issues and decision-making processes in negotiation situations. The training protocol was tested in an upper-level course on negotiations at USMA. Cadets were assigned to either an experimental (training) or a control (no training) group. The experimental group was exposed to four negotiation scenarios at one-month intervals, and were asked to evaluate the scenario for potential ethical issues, to role-play the scenario in class, and then to evaluate their own and others' negotiation and ethical decision-making performances. Role-plays were followed by an after action review in which the instructor encouraged Cadets to discuss their ethical evaluation and decision-making processes. Following the fourth scenario, the instructor presented a lecture describing a thematic model of ethical sense-making (cf. Graves, Pleban, Miller, Branciforte, Donigian, Johnson, & Matthews, 2010) and how the model could be applied to facilitate decision-making across different contexts. Pre-post training assessments indicated that the training strategy significantly improved the experimental group's sensitivity to themes related to ethical sense-making and decision making in military specific situations relative to scores obtained from the control group. Also, post exercise ethical awareness scores correlated significantly with Cadets' negotiation strategies. The Cadets' responses to the training were favorable. The training strategy may be used to support experiential and dialogue-based professional military ethics training for officer Cadets and newly commissioned junior officers (ROTC, OCS, and USMA). http://handle.dtic.mil/100.2/ADA535714

KEYWORDS: professional military ethics training, assessment and training development, decision making, active learning, ethical perceptions scale (EPS), thematic model, ill-defined domains

RR 1939
Training Aids for Basic Combat Skills: A Procedure for Training-Aid Development
Martin L. Bink, Richard L. Wampler, Michael D. Dlubac, & Evelyn A. Cage. February 2011. (ADA544611)

There is a need to augment existing Army training approaches to address the differential rates and stages of learning evidenced among Soldiers. One way to easily modify existing training approaches is to make adjunct training aids available to trainers for use when appropriate. The fact that basic combat skills represent a heterogeneous skill set and are trained to Soldiers with large variability in skills and knowledge suggests that training aids may have a significant impact when used to train basic skills. This report describes a training-aid development process and provides a brief summary of training aids produced: a set of 200-meter zero targets, two aids to assist in the marksmanship zero process, material to reinforce and practice grid-coordinate skill, and a video capture and playback system. An assessment was conducted for each prototype training aid to determine its training value and to gain feedback for possible revisions. Each training aid contributed to enhanced Soldier performance. Details on the design, development, and assessment for each of the prototypes are provided in separate reports. http://handle.dtic.mil/100.2/ADA544611

KEYWORDS: training aids, basic combat skills, tailored training, rifle marksmanship, grid coordinates, training feedback

RR 1940; See ARI RN 2012-04

RR 1941
Training Aids for Basic Combat Skills: Developing Map-Reading Skill
Richard L. Wampler, Martin L. Bink, & Evelyn A. Cage. March 2011. (ADA556404)

The overarching goal was to develop a training aid that could be used by Initial Entry Training (IET) companies to assist Soldiers in improving map-reading skill proficiency. Training-aid development followed a five-phase process: Design, Development, Utilization, Assessment, and Revision. After developing two training aids, background information and hands-on practice, two IET companies completed the training-aid assessment process consisting of a test immediately following map-reading training, three weeks of using the aids, and a retention test. Low-performing Soldiers scored higher when they used the hands-on practice training aid and all Soldiers benefitted from the background-information training aid. The two separate packets were integrated into a single training packet that included both the background information and hands-on practice. Designing an adjunct training aid to be compatible with various levels of skill proficiency can be effective in improving training. The single packet will allow Soldiers to use the training aid without assistance and, because practice questions are of varying degrees of difficulty, will allow Soldiers at various skill levels to benefit. http://handle.dtic.mil/100.2/ADA556404

KEYWORDS: training aids, basic combat skills, map reading, tailored training, determining grid coordinates

RR 1942
The Retention of Digital Skills Following Distributed and Traditional Training
Gregory A. Goodwin, Jennifer S. Tucker, Richard L. Wampler, Amanda N. Gesselman, & Vanessa Johnson. April 2011. (ADA542513)

As digital systems proliferate in the Army, there is a need for commanders to understand how to best maintain these critical warfighter skills. In the present report, skill retention for the Force XXI Battle Command Brigade and Below (FBCB2) digital system was investigated following traditional face-to-face training and distributed learning (dL) training. This second type of training was examined because little is known about training digital skills using this method. Operator skills were measured immediately and eight weeks following the training. There were no differences in overall performance between the dL and traditional students at baseline suggesting this system can be trained effectively in a dL environment. Both groups also showed similar rates of forgetting after the eight-week retention interval. Overall performance declined significantly from 71% of steps correct at baseline to 62% correct eight weeks later. Characteristics of the digital system and of the participants contributed to forgetting. These findings indicate that FBCB2, and presumably other digital systems can be effectively trained in a dL environment. Additionally system and individual characteristics that contribute to skill decay were identified and can be used to both improve system training and system design. http://handle.dtic.mil/100.2/ADA542513

KEYWORDS: FBCB2, Force XXI Battle Command Brigade and Below (FBCB2), command and control, digital skills, skill retention, digital training, distributed learning, blended learning

RR 1943
Developing Performance Measures for Army Aviation Collective Training
Melinda K. Seibert, Frederick J. Diedrich, John E. Stewart, Martin L. Bink, & Troy Zeidman. May 2011. (ADA544425)

Army Aviation tactical training exercises usually involve an entire Battalion or Combat Aviation Brigade (CAB). Due to cost and logistical considerations, the Army's aviation tactical exercise (ATX) takes place in a shared virtual environment employing networked simulators and training devices. ATX employs state of the art technology; however, objective measurement of team performance has not kept abreast of aviation simulation technology. It is unclear how observational ratings and electronic system data (from simulators) can be used to assess team performance and provide actionable feedback to unit commanders and trainees. To address these challenges, we: (1) determined the dimensions that differentiate high-performing aviation teams from low-performing aviation teams in scout- attack missions at the Battalion and Company levels; (2) determined collective-task dimensions that can be captured using simulator data during ATX, and (3) constructed behaviorally-based prototype measures to assess unit-level performance for those collective task dimensions not represented by simulator data. Future

implementation of system-based and observer-based measures of collective task performance should lead to improved assessment of training strategies at ATX where CABs prepare for deployment. Refinement of these measures should likewise provide specific, diagnostic feedback to commanders on their unit's progress during virtual and live training. http://handle.dtic.mil/100.2/ADA544425

KEYWORDS: collective training, Army aviation, collective performance measurement, aviation tactical exercise

RR 1944
Behavioral, Attitudinal, and Cultural Factors Influencing Interagency Information Sharing
Brooke Schaab, Arwen Hunter DeCostanza, & CDR Chadwick Hixon. May 2011. (ADA554024)

This research examined factors influencing information sharing between distributed organizations. Participating in a U.S. Joint Forces Command sponsored experiment, interagency partners conducted planning for simulated crises, with each organization working from their own location, utilizing their own information sharing technology to exchange information. Participants completed a pre- and post-experiment questionnaire, which examined factors influencing interagency information sharing. Findings suggest that organizational culture, attitudes toward information sharing, perceived interdependence, and trust are likely to influence information sharing behaviors and collaboration. Experiences throughout interagency experiments and exercises can shape future collaboration attitudes, so simply coming together to interact in an event will not necessarily result in better collaboration in the future. Suggestions for enhancing interagency collaboration based on questionnaire results and observations are presented. http://handle.dtic.mil/100.2/ADA554024

KEYWORDS: distributed information sharing, trust, perceived interdependence, interagency collaboration

RR 1945
Training Aids for Basic Combat Skills: A Video Feedback System
Richard L. Wampler, Michael D. Dlubac, & Martin L. Bink. May 2011. (ADA544612)

The overarching goal was to develop a training aid that could be used by Initial Entry Training (IET) companies to provide timely performance feedback to Soldiers. Training-aid development followed a five-phase process: Design, Development, Utilization, Assessment, and Revision. The training aid consisted of compact and light-weight cameras and projectors to record and playback training events. Drill Sergeants (DSs) from seven different IET companies recorded activities during over 30 training events. Users stated that the camera was useful for collective training events, but not for some of the desired activities during individual training events. Shortcomings included an inability to zoom-in to see close-up details, no means to playback the video in slow motion, and the requirement for an adequate light source to capture a viewable image. The projector was rarely used. In addition, the most prevalent response from DSs was that the rapid pace of

the training schedule and the high Soldier-to-DS ratio made it unrealistic to attempt to provide immediate performance feedback to Soldiers. The video capture and playback system did not meet the purposes of an IET training environment, but the research led to an understanding of future requirements for such a system.
http://handle.dtic.mil/100.2/ADA544612

KEYWORDS: training aids, training devices, basic combat training (BCT), basic combat skills, training feedback

RR 1946
Evaluating a Job Aid for Actions on Contact at the Joint Readiness Training Center
Kenneth L. Evans, CPT Joshua J. Blizzard, 1SG James E. Jones, & SFC William C. Ryan. June 2011. (ADA545882)

The present investigation sought to quantify small unit practices during actions on contact at the Joint Readiness Training Center (JRTC) and to determine the extent to which a job performance aid, the Warrior Leader's Guide for Actions on Contact, might improve unit performance. The Actions on Contact Checklist, a tool developed especially for the investigation, was used by JRTC's trainer/mentors to measure unit performance. Over the course of nine unit rotations at JRTC, 754 checklists were collected and analyzed. Some support for the efficacy of the Warrior Leader's Guide to positively influence unit performance was found, primarily in the consolidation and reorganization phase of operations. Unit strengths and weaknesses in actions on contact were identified. On all nine measures of attack execution, units that rehearsed prior to an operation performed significantly better than units that did not rehearse.
http://handle.dtic.mil/100.2/ADA545882

KEYWORDS: actions on contact, Joint Readiness Training Center (JRTC), job performance aids, battle drills, mission rehearsals, small unit leader training

RR 1947
Training Aids for Basic Combat Skills: Obtaining a 200 M Zero with M16 Rifle and M4 Carbine
Martin L. Bink, Michael D. Dlubac, Evelyn Cage, & Richard L. Wampler. May 2011. (ADA557028)

The overarching goal was to develop a training aid that could be used by Initial Entry Training companies to assist Soldiers to improve weapon-zeroing proficiency. More specifically, the research reported here addressed the need for targets and training aids for a 200 m zero. Training-aid development followed a five-phase process: Design, Development, Utilization, Assessment, and Revision. Ballistically-accurate targets for

initial zeroing and confirm zero were developed as well as sight-adjustment practice flashcards and a marksmanship fundamentals coaching card. The training aids were designed to structure peer-learning contexts and support feedback in peer learning. Comparison of the developed targets to standard 300 m zero targets modified for 200 m zero showed that the new 200 m zero targets provided more consistent and accurate zeroing performance and supported the maintenance of skill across training events.

Soldiers reported that the sight-adjustment and coaching cards were helpful. After minor modifications, the 200 m zero targets were transitioned to the U.S. Army Training and Doctrine Command Capabilities Manager for Live Training for distribution.
http://handle.dtic.mil/100.2/ADA557028

KEYWORDS: training aids, basic combat skills, 200 m zero, basic rifle marksmanship

RR 1948
Training Platoon Leader Adaptive Thinking Skills in a Classroom Setting
Robert J. Pleban, E. Daly Vaughn, Jason Sidman, Alexandra Geyer, & Robert Semmens. June 2011. (ADA544978)

A problem-based learning (PBL) strategy (Schwartz & Bransford, 1998) was used to develop a training protocol to enhance Infantry lieutenants' adaptive thinking/problem solving skills in the context of a mission planning exercise. The training protocol was tested using recent graduates of the Infantry Basic Officer Leader Course (IBOLC). Participants were assigned to either an experimental (PBL training) or a control (partial treatment) group. Both groups were exposed to four planning exercises over an eight-hour instructional period and asked to develop, individually, a platoon offensive operation order (OPORD), and then modify their order based on additional information (two fragmentary orders - FRAGOs). Following the first FRAGO, the instructor presented a lecture to the experimental group describing key conceptual points and their relevance to the mission planning process. After additional practice (FRAGO 2), the groups were then presented with another mission-stability operation, which served as the transfer task. Analysis of the performance-based mission planning ratings showed that the experimental group's performance did not significantly differ from that of the control group (no lecture). With regard to participant self-reports of the training, the control group's attitudes toward various aspects of the instruction were generally more positive than those of the experimental group. A major impediment to the training was the inadequate time allocated to effectively execute the instruction. Specific issues related to employing a PBL strategy in a military classroom environment were identified. These issues included the duration and structure of the training events (i.e., OPORD, FRAGOs, and transfer task), instructor preparation, control group design, classroom size, and development of metrics for measuring deep understanding. Each of these areas is briefly discussed. In summary, the findings indicate that revisions to both the instructional design and content of the training module are needed if PBL instruction is to be used successfully in the development of adaptive thinking skills in an institutional training environment.
http://handle.dtic.mil/100.2/ADA544978

KEYWORDS: adaptability, mission planning, troop leading procedures, platoon leader decision-making, constructivist learning strategies, problem-based learning, classroom-based training

RR 1949
Non-Cognitive Predictors and TSC 3B Market Expansion: Examining MOS Impacts
Paul J. Sticha, Tirso E. Diaz, Elise A. Weaver, & Peter M. Greenston. July 2011. (ADA546688)

ARI has been investigating the potential that non-cognitive predictors could play in expanding the supply of highly-motivated AFQT test score category (TSC) 3B applicants. The initial research effort was known as the Expanded Enlistment Eligibility Metrics (EEEM) project, and preliminary results were encouraging: non-cognitive predictors have been tested that appear to identify a subset of TSC 3B applicants with predicted attrition (and possibly job performance) comparable to that of TSC 1-3A applicants. One concern regarding the implementation of these new predictors is whether an increase in TSC 3B applicants and a corresponding decrease in TSC 1-3A applicants would have repercussions for Army MOS TSC 1-3A goals. The objective of this effort is to estimate the effect of illustrative increases in the number of TSC 3B applicants on the allocation of applicants to their initial MOS training. The objectives were addressed with application of the Enlisted Personnel Allocation System (EPAS) model, designed to simulate the allocation / classification process.
http://handle.dtic.mil/100.2/ADA546688

KEYWORDS: enlisted selection and classification, Enlisted Personnel Allocation System (EPAS), non-cognitive predictors, Soldier Quality Accession Goals

Research Products

RP 2011-01
Advisor Influence Strategies: 10 Cross-Cultural Scenarios for Self-Assessment and Reflection
Michelle Ramsden Zbylut , Michelle Wisecarver, Hannah Foldes, & Rob Schneider
October 2010. (ADA534107)

Knowing and being able to use a variety of influence strategies can be important to military personnel who find their job requires them to interact with people outside of their chain of command. Influencing individuals outside the chain of command can be daunting when influence must occur across a cultural divide. This is often the situation in which security force advisors, combat advisor teams, and transition teams find themselves—attempting to influence individuals from another culture who are not in their chain of command. This book contains a self-assessment tool and reflection questions to assist individuals interested in learning more about the types of situations in which advisors find influence is necessary. The scenarios were drawn from real events told by returning advisors and include influence strategies found in Army Leadership Doctrine and the psychology and management literatures. While the situations depicted are specific to the advising mission, reviewing the situations may be useful to any military leader who anticipates that they will need to influence someone from another culture. http://handle.dtic.mil/100.2/ADA534107

KEYWORDS: cultural awareness, leadership, influence, culture, advise, security force assistance, coin, transition team, advisor, self-development, self-awareness

RP 2011-02
Instructor's Peer-to-Peer Learning Guide for the Army Reconnaissance Course
William Cooper, Bruce C. Leibrecht, & Carl W. Lickteig. November 2010.
(ADA537884)

The Army Reconnaissance Course (ARC) at Fort Knox, Kentucky, has adopted peer-to-peer (P2P) learning methods as part of a transition to outcomes-based training. To help cadre expand their P2P training competencies, the *Instructor's P2P Learning Guide for the ARC* was developed to serve as a professional development and performance support tool. The guide incorporated principles and best practices of P2P training. The Guide underwent iterative review by course leaders and instructors during initial development. The guide was then field tested by the ARC cadre and revised based the feedback from two stages of evaluation. This document describes the contents, organization, and presentation style of the guide. It includes the complete guide along with suggestions for utilizing the educational materials, procedural guidelines, and job aids.
http://handle.dtic.mil/100.2/ADA537884

KEYWORDS: peer-to-peer learning, Army reconnaissance course, full spectrum training, leader attributes, instructor self-development, instructional methods

RP 2011-03

A Model of Emotion Management for U.S. Army Leaders

Amanda Shipman, Tamara Friedrich, Brandon Vessey, Shane Connelly, Eric Day, Alyssa Douglass, John Schroeder, & Gregory A. Ruark. December 2010. (ADA535214)

Emotion management may be particularly important for effective Army leadership in certain performance domains. In addition to typical leadership tasks such as providing performance feedback, resolving conflicts and team-building activities, Army leaders must perform in potentially volatile and high stress situations, handle life or death decisions, interact with individuals from a variety of cultures and backgrounds, and address issues related to living over-seas. These reflect some of the important performance contexts facing Army leaders in which emotions can play a significant part. This research proposes a model of emotion management intended to form the basis for training Army leaders. The model integrates several areas of emotion research, including emotional intelligence, emotion regulation, and emotion expression. Specified in this model are four key domains that could potentially be enhanced through training interventions, including 1) emotion knowledge, 2) emotion skills, 3) situational moderators, and 4) emotion relevant performance domains. The model also notes the importance of considering individual differences in developing emotions management training, as well as organizational support for this kind of training initiative. Propositions regarding components of this model are suggested to advance theoretical understanding of emotion management concepts, specify directions for future research and identify implications for training leaders in emotion management. Finally, existing training programs of emotion management skills are reviewed with respect to the content areas described in the model.
http://handle.dtic.mil/100.2/ADA535214

KEYWORDS: emotion management, emotional intelligence, leadership

RP 2011-04; See ARI RN 2012-04

RP 2011-05

Host-Nation Operations: Soldier Training on Governance (HOST-G) Training Support Package

Trevor M. Conrad, Rebecca Mulvaney, Alice Hirzel, Jennifer Stern, Steven Aude, Lauren Tindall, & Jeffrey E. Fite. July 2011. (ADA 546285)

The Iraq and Afghanistan campaigns have taught the U.S. Army the importance of establishing and supporting local and national institutions in order to develop stability within the host-nation. As a result, Army leaders asked for governance training that will provide the knowledge, skills, and abilities that Soldiers at the unit level will need to carry out and support governance-related missions. This research product describes research and development efforts to address that critical need. The Host Nation Operations: Soldier Training on Governance (HOST-G) Training Support Package, which is contained in this product, can be utilized by leaders during training and when performing governance-related activities in theater. It contains multiple resources that can be used for understanding governance, to train specific activities, and assist with carrying out governance-related activities within the operational environment. The

training and training materials were developed to be adaptive and applicable to any geographic region, country, or culture. In addition, the training can be used by leaders from platoon to brigade level. The training tools and job aids described here are available as two CDs in, *"Host-Nation Operations: Soldier Training on Governance (Host-G) Training Tools and Job Aids,"* ARI Research Product 2011-06. http://handle.dtic.mil/100.2/ADA546285

KEYWORDS: skill identification, training, governance, host-nation, training tools, job aids, governmental legitimacy

RP 2011-06

Host-Nation Operations: Soldier Training on Governance (HOST-G) Training Tools and Job Aids

Trevor M. Conrad, Rebecca Mulvaney, Alice Hirzel, Jennifer Stern, Steven Aude, Lauren Tindall, & Jeffrey E. Fite. July 2011. (ADM002361 / CD-ROM)

The Iraq and Afghanistan campaigns have taught the U.S. Army the importance of establishing and supporting local and national institutions in order to develop stability within the host-nation. As a result, Army leaders asked for governance training that will provide the knowledge, skills, and abilities that Soldiers at the unit level will need to carry out and support governance-related missions. The Host-Nation Operations: Soldier Training on Governance (HOST-G) Training Support Package (Conrad et al., 2011) was developed to address that critical need. These CD-ROMs contain the following training tools and job aids meant to accompany the training support package: Computer-Based Training, Governance Activity List, Situational Training Exercise, LEGIT Assessment Tool, Annex to Continuity Books, Metrics Workbook, and a "Be on the Lookout" (BOLO) Worksheet. Full details on the development and intended use of these products can be found in the *"Host-Nation Operations: Soldier Training on Governance (HOST-G) Training Support Package,"* ARI Research Product 2011-05. All of the products were designed for use with Microsoft Word, Microsoft Excel, common image viewers, and Adobe Reader, so that they can be easily accessed and modified to fit the needs of operational units. http://handle.dtic.mil/100.2/ADM002361

KEYWORDS: skill identification, training, governance, host-nation, training tools, job aids, governmental legitimacy

RP 2011-07

Rifle Marksmanship Diagnostic and Training Guide

David R. James, & Jean L. Dyer. May 2011. (ADA544533)

A Rifle Marksmanship Diagnostic and Training Guide was developed to assist Army drill sergeants diagnose and train Soldiers in the Initial Entry Training (IET) environment. The guide was based on subject matter expert input from the Infantry One Station Unit Training (OSUT) Brigade and the U.S. Army Marksmanship Unit (USAMU). These experts were interviewed to obtain effective training and diagnostic techniques and lessons learned through years of training IET Soldiers. The guide integrates this

information, sequences it according to the marksmanship program, and thoroughly illustrates the major training principles and lessons learned. All information supplements and complements the Army marksmanship field manual. The guide is an Appendix to the report. http://handle.dtic.mil/100.2/ADA544533

KEYWORDS: Initial Entry Training (IET), rifle marksmanship, Drill Sergeants, U.S. Army Marksmanship Unit, diagnosing skills, training, marksmanship fundamentals

RP 2011-08
Soldiers' Toolbox for Developing Tactics, Techniques, and Procedures (TTP)
Richard Topolski, Bruce Leibrecht, Timothy Porter, Robert Kiser, Chris Green, & Brian T. Crabb. July 2011. (ADA517635); (ADM002360 / CD-ROM)

The purpose of the Soldiers TTP Toolbox is to assist units and Soldiers in generating or revising tactics, techniques, and procedures (TTP). The TTP Toolbox provides a methodical, proven approach to TTP development or revision based upon an existing Flexible Method of Cognitive Task Analysis (FLEX) (Shadrick, Lussier, & Hinkle, 2005) further tested and refined during subsequent research (Topolski, Leibrecht, Kiser, Kirkley, & Crabb, 2009). The TTP development/revision process involves the use of tactical vignettes in various development/revision modes (i.e., environments) to drive discussion sessions from which the unit will capture and organize data relevant to TTP. Ideally, units should progress through three modes (MAPEX/table top, simulation, and live exercise) to increase realism and thereby improve accuracy, add detail, and boost confidence in the session outcome.
http://handle.dtic.mil/100.2/ADA517635
http://handle.dtic.mil/100.2/ADM002360

KEYWORDS: tactics, techniques, procedures, simulation-based vignettes, future force, knowledge assessment

RP 2011-09
After Action Review Guide for Trainers of Virtual Battlespace-2 Missions
Chris Green, Bruce Leibrecht, & Jeffrey E. Fite. June 2011. (ADA548308)

The Virtual Battlespace-2 (VBS2) training simulation provides special feedback capabilities for supporting mission after action reviews (AARs). To help AAR facilitators leverage the software's special AAR capabilities, the *VBS2 AAR Guide* was created to serve as a professional development and performance support tool. Full details on the development of the guide can be found in ARI Technical Report 1294, *Guidelines and Tools for VBS2 Mission After Action Reviews: Development and Evaluation*. The guide incorporated doctrinal AAR guidelines as well as best practices gleaned from academic and technical literature. The guide underwent iterative review by schoolhouse leaders and instructors during initial development. The guide was then field tested by cadre members of three different Army courses and revised based on their feedback. This publication describes the contents, organization, and presentation style of the guide. It includes the complete guide along with suggestions for utilizing the materials to realize optimal benefits. The products are the culmination of a multi-faceted research program

that developed methods and measures for communicating tactics, techniques, and procedures to Soldiers. http://handle.dtic.mil/100.2/ADA548308

KEYWORDS: After Action Review (AAR), game-based training, virtual simulation training, training support tool, Virtual Battlespace-2, situated soldier learning

Study Reports

SR 2011-01
Identification and Accessioning of Individuals for the Officer Candidate School (OCS)

Joy Oliver, Sharon Ardison, Teresa L. Russell, & Nehama E. Babin. February 2011. (ADA539327)

The "AccessOCS" project was a qualitative study designed to (a) identify and describe Officer Candidate School (OCS) applicants in terms of motivations, backgrounds, and incentives; (b) identify how the OCS selection and application process works, and (c) develop recommendations for improving the OCS accessioning process. The research approach was to conduct focus groups and one-on-one interviews with a number of personnel, e.g., sponsors, applicants, government officials, to learn about the OCS accessioning process from several vantage points. These individuals included: OCS candidates; OCS instructors, cadre, and Company Commanders; Basic Officer Leadership Course B (BOLC B) lieutenants; Captain's Career Course (CCC) officers; recruiters; and policy-level government officials. Content analysis of the interviews and focus groups revealed the following key findings: findings substantiated the fact that OCS candidates express a desire to serve and a commitment to the Army; OCS application procedures can be difficult for applicants to understand and utilize; a standardized, stored database management system for tracking officer candidates and their performance is lacking; officer candidates could be better prepared for OCS; and the review board process is decentralized. Issues surrounding the branch assignment are discussed. Several recommendations for improvement are presented. http://handle.dtic.mil/100.2/ADA539327

KEYWORDS: officer accession, officer selection, officer candidate school (OCS), attrition, officer candidates

SR 2011-02
Identification of Brigade Command Competencies

Heather M.K. Wolters, Patrick Gavan O'Shea, Laura A. Ford, Matthew S. Fleisher, Mary A. Adeniyi, Clair E. Conzelman, & Russell J. Webster. June 2011. (ADA548193)

The nature of leadership at the Brigade Command level has transformed in recent years, as many of the functions that were Division-level responsibilities have been pushed down to the Brigade. This research identified the competencies required for successful performance in this transformed environment. Twenty-one interviews with current and former Brigade Commanders, Brigade Staff, Brigade Command Sergeants Major, and former Division Commanders helped refine a preliminary competency list. Subsequent survey results from 64 current Brigade Commanders provided data addressing (a) the proficiency level needed for each competency, (b) the extent to which each competency differentiated among superior and less effective Brigade Commanders, and (c) the extent

to which each competency is fostered in pre-command training education. Ultimately, this research identified 39 competencies that could be categorized in four competency training clusters: leadership skills, operational skills, personal capabilities, and knowledge base. The survey also identified optimal methods to train each competency type. The Brigade Command Competency Model clarifies the leadership and command competencies required at this command level and can be used to help assess training effectiveness and identify training gaps that may exist. http://handle.dtic.mil/100.2/ADA548193

KEYWORDS: Brigade Command, competency model, army leadership, leadership development, leadership training, command training

Study Notes

SN 2011-01
Updating ARI Educational Benefits Usage Database for Army Regular, Reserve, and Guard: 2009-2010
Winnie Young. May 2011. (ADA544027)

This report describes the updating of ARI's educational benefits usage database with Montgomery GI Bill and Army College Fund data for Army Regular, Reserve, and Guard components over the 2009 and 2010 period. For the Regular component, the report includes tabulations of program participation and benefit usage, type of educational program entered, and time between separation and start of education benefits. For Reserve and Guard components, the report includes tabulations by benefit eligibility status, VA training time type, and type of educational program entered. The tabulations are presented by entry cohort, going back to the 1985 entry cohort for all three components. http://handle.dtic.mil/100.2/ADA544027

KEYWORDS: Montgomery GI Bill, Army College Fund; military education benefits, program participation and usage

SN 2011-02
Development and Validation of Measures for Selecting Soldiers for the Officer Candidate School
Teresa L. Russell, & Trueman R. Tremble (Eds.). August 2011. (ADA548454)

The objectives of this project were to (a) develop and validate a predictor battery to identify OCS applicants with the most leadership potential, the best fit with the Army, and the greatest likelihood of staying in the Army and (b) investigate the outcomes of the two different avenues to OCS, namely the enlistment-option program (i.e., recruitment of civilians with a college degree) and the in-service program (i.e., the selection of enlisted Soldiers). The predictor battery (i.e., Officer Background and Experience Form, or OBEF) included measures of temperament, affectivity, values, and leadership judgment. The OBEF was validated against several criterion measures -- OCS class performance data, attitudinal data, and career intentions gathered at the beginning and end of each class. Results were remarkably similar for the enlistment-option and in-service candidates. The OBEF scales added significantly to the prediction of affective commitment, career intentions, and OCS scores for leadership, fitness, and the total score. Future research should cross-validate these results and develop guidelines for using the OBEF for OCS selection, including how and when it would be administered and what the cut scores should be.
http://handle.dtic.mil/100.2/ADA548454

KEYWORDS: officer selection, officer candidate school (OCS), attrition, validation, officer candidates, personnel screening tests, psychological tests

Research Notes

RN 2011-01
Integrating Adaptability into Special Operations Forces Intermediate Level Education
Gonzalo Ferro, Meredith Cracraft, & Scott A. Beal. October 2010. (ADA531622)

This report provides the results of a needs assessment and analysis of adaptability education at the Command General Staff College (CGSC), Fort Leavenworth, Kansas. In includes recommendations for modifications to the CGSC Special Operations Forces curriculum that are supported by a need to further develop adaptive leaders at the operational and strategic levels. The results, conclusions, and recommendations were drawn from information collected from recent CGSC Intermediate Level Education (ILE) graduates, current ILE students, instructors, course developers, and from the research literature on dimensions of adaptive performance. A set of instructional modules was developed from this assessment to enhance the ILE Special Operations Forces course content specific to developing, training, and promoting adaptability as a viable and necessary construct. http://handle.dtic.mil/100.2/ADA531622

KEYWORDS: adaptability, adaptive leader, special operations force, intermediate level education, officer education

RN 2011-02
Improving the Trainee Socialization Process in Basic Combat Training
M. Glenn Cobb, David M. Sluss, Stephanie T. Muraca, Brandy A. Brown, Margaret Salter, & Raina Rutti (January 2011. (ADA535715)

During discussions with the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) in Feb 2006, the Commanding General (CG), Ft. Jackson, requested that ARI determine what assimilation into the Army culture consists of, while developing and testing prototype methodologies, measurement instruments, and analytical strategies to ascertain which aspects of the Army socialization process are or are not succeeding. To address these concerns, a reliable set of metrics were developed to track attitude and value change at three points in basic training. Data were collected at Ft. Jackson, SC, and Ft. Benning, GA, during Reception, near the end of BCT-White Phase (equivalent to the midpoint of OSUT), and just before graduation. Exploratory and confirmatory factor analyses were used in conjunction with repeated measures ANOVA and hierarchical linear regression to examine how new Soldiers' attitudes and relational identification change during basic training. Selected findings indicate: (1) basic training effects positive changes in Soldier attitudes regardless of variations in personality and other individual difference measures, (2) identification with Battle Buddies, Drill Sergeants, and their platoon significantly impacted Soldierization outcomes during basic training and changed as training progressed, and (3) by the end of basic training, the degree to which their DSs have modeled the Army's values and desired behaviors emerges as one of the most significant factors in the Soldierization process. These findings are discussed in terms of DS training tactics and the

relationships that develop among Soldiers and between Soldiers and DSs during basic training. http://handle.dtic.mil/100.2/ADA535715

KEYWORDS: Basic Combat Training (BCT), soldierization, new soldier transformation, new soldier socialization, training methodology, initial entry training (IET), basic training, One Station Unit Training (OSUT)

RN 2011-03
List of U.S. Army Research Institute Research and Technical Publications for Public Release/Unlimited Distribution. Fiscal Year 2010.
U.S. Army Research Institute for the Behavioral and Social Sciences. April 2011. (ADA542410)

ARI publishes bibliographies of its technical and research publications as convenient references for qualified agencies, individuals and sponsors. This listing describes reports with unrestricted distribution published during Fiscal Year 2010, October 1, 2009 to September 30, 2010. The abstracts have been written, as far as possible, to describe the principal research findings in non-technical terms; however, technical language is often used to effectively communicate the details of research conducted. The bibliography includes bibliographic citations with abstracts, author indexing, and keywords.

The list of publications for restricted/limited distribution published during Fiscal Year 2010, October 1, 2009 to September 30, 2010 is ARI Research Note 2011-04. http://handle.dtic.mil/100.2/ADA542410

RN 2011-04 (Restricted) U.S. Army Research Institute Publications, Fiscal Year 2011.

RN 2011-05
Development and Evaluation of a Career Continuance Model for Company Grade Officers in the United States Army
Robert J. Schneider, Jeff W. Johnson, Caroline C. Cochran, Sarah A. Hezlett, Hannah J. Foldes, & Kelly S. Ervin. March 2011. (ADA543634)

We present a dynamic model of company grade officer career continuance that is designed to inform future interventions intended to retain company grade officers, as well as to inform future research to enhance understanding of the retention process. Both a taxonomic model and a process model are presented, with the taxonomic model defining the constructs included in the process model, and the process model specifying relationships between constructs. A number of moderator variables are hypothesized, which are especially important for suggesting interventions to increase retention. Those moderator variables are consistent with interventions implemented as part of project STAY, and also suggest future interventions beyond the scope of that project. We conducted an initial evaluation of the model using (a) data obtained from existing officer

surveys and tracking databases, and (b) evaluations of the interventions implemented as part of this project. We found empirical support for several hypotheses derived from the model, and suggest directions for future research.
http://handle.dtic.mil/100.2/ADA543634

KEYWORDS: career continuance, Army company grade officers, Officer retention, Interventions for improving continuance

RN 2011-06
Army Officer Counseling Training for Commanders: Participant Manual
Michael J. Cullen, Hannah J. Foldes, Janis S. Houston, Robert J. Schneider, Emily E. Duehr, & Jeff W. Johnson. April 2011. (ADA544443)

We developed and evaluated a retention counseling training program targeted at influencing factors identified as important to company grade officers' retention decisions, documented in Johnson, Houston, Foldes, Cullen, Stellmack, Ervin, Schneider, & Duehr (2009; ARI RN 2011-08). This Research Note includes the training manual for participants and serves as an appendix to Johnson, et al.
http://handle.dtic.mil/100.2/ADA544443

KEYWORDS: company grade officer retention, officer retention training, officer counseling training, career continuance

RN 2011-07
Establishing an Intellectual and Theoretical Foundation for the After Action Review Process – A Literature Review
James P. Bliss, Steven A. Minnis, Jeffery Wilkinson, Thomas Mastaglio, & John S. Barnett. April 2011. (ADA543054)

The purpose of this report is to provide a literature review of the cognitive and learning science research that is relevant to defining an effective after action review (AAR) process. The goal of this review is to assemble research sources that apply to the design and conduct of after action reviews. Therefore, this report provides a synopsis of research that exists, identifies notable researchers who have addressed the problem, presents results of both military and non-military investigations or implementations of the AAR technique, highlights existing theories that may contribute to the advancement of AARs, and isolates specific areas that demand further work. The findings are a distillation of what is known about the AAR process. As such, they would be of interest to researchers who wish to acquire or update their knowledge of the area. The findings would also be of interest to those who train AAR facilitators as a comprehensive foundation of AAR research. http://handle.dtic.mil/100.2/ADA543054

KEYWORDS: After Action Review (AAR), training, feedback

RN 2011-08

Development and Evaluation of Counseling Training for Commanders to Enhance U.S. Army Company Grade Officer Career Continuance

Jeff W. Johnson, Janis S. Houston, Hannah J. Foldes, Michael J. Cullen, Amy L. Stellmack, Kelly S. Ervin, Robert J. Schneider, & Emily E. Duehr. April 2011. (ADA542440)

We developed and evaluated a retention counseling training program targeted at influencing factors identified as important to company grade officers' retention decisions. Training was given to Company Commanders, Battalion Commanders, XOs, and S3s in four brigades. The impact of training was evaluated by administering pre- and post-surveys (four months after training) to company grade officers under the trainees' command. Trainee feedback was used to revise the training program. Hierarchical regression analyses controlling for Time 1 satisfaction demonstrated that both the quantity and rated quality of counseling were related to Time 2 satisfaction levels on many factors believed to have the strongest connection to career continuance. Among those who received counseling from someone we trained, there was a significant increase in intention to stay in the Army from Time 1 to Time 2. The training focused on the importance of conducting informal counseling in addition to formal counseling, and results showed that both types of counseling interact to influence variables such as career satisfaction, leadership satisfaction, and morale. Recommendations are made to introduce training similar to that used in this intervention to officers early in their career, with periodic retraining of the counseling strategies and behaviors throughout an officer's career. http://handle.dtic.mil/100.2/ADA542440

KEYWORDS: company grade officer retention, officer retention training, officer counseling training, career continuance

RN 2011-09; See ARI RN 2012-04

Contractor Reports

CR 2011-01
Joint Measurement Operations Controller (JMOC)
John Feeney, William Salter, Jeanine Ayers, Matthew Puglisi, & Brooke Schaab. January 2011. (ADA535422)

The increasingly complex interactions of systems of systems for training today's military means that supporting joint training exercises includes supporting live, virtual and constructive simulations. Capturing and integrating observer-based measures with other data sources is essential for supporting complete assessment of training exercises. The Joint After Action Review Repository (JAAR) is a suite of software tools, linked through a common architecture that leverages a number of efforts across Services and is made available to, and has been used by, various end-user training organizations. Joint Measurement Operations Control (JMOC) successfully integrated the SPOTLITE platform for the collection of observer-based measures into the JAAR. JMOC also provided measures to support both exercises and the JAAR program by using observer-based measures to capture performance on the installation and training for JAAR integrations and deployments. Finally, the efforts of JMOC constitute a foundation for transitioning other measurement technologies into the JAAR.
http://handle.dtic.mil/100.2/ADA535422

KEYWORDS: Joint Measurement Operations Control (JMOC), Joint After Action Review Repository (JAAR), measurement technology

CR 2011-02; See ARI RN 2012-04

Abbreviations

S	**Special Report**	**SR**	**Study Report**
TR	**Technical Report**	**SN**	**Study Note**
RR	**Research Report**	**RN**	**Research Note**
RP	**Research Product**	**CR**	**Contractor Report**

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Barnett, J. S., Singer, M. J., & Taylor, G. S. (2010, November). *Game-based simulators for platoon-level training: What coalition soldiers want.* Poster session presented at the 27th Army Science Conference, Orlando, Florida.

Bink, M., & Cage, E. *Developing training aids for effectiveness across skill levels.* (2010, November). Poster session presented at the 27th Army Science Conference, Orlando, FL.

Bink, M. L., & Cage, E. A. (2011, June). *Developing training aids for effectiveness across skill levels.* Poster presented at the Ninth Biennial Meeting of the Society of Applied Research in Memory and Cognition (SARMAC), New York, NY.

Cage, E., & Bink, M. (2011, August). *Training aid development for basic combat skills: Process, products, and outcomes*. Poster presented at the Annual Meeting of the American Psychological Association (APA), Washington, D.C.

Davis, F., Scielzo, S., Riley, J.M., Hyatt, J., & Lampton, D. (2010, November). *Adapting traditional military doctrine to modern training technology: Innovative training approaches utilizing serious games.* Paper presented at the 27th Army Science Conference, Orlando, FL.

Durlach, P. J. & Dargue, B. W. (2010, November). *Adaptive and non-adaptive training technology for small unmanned aerial system employment*. Paper presented at the 27th Army Science Conference, Orlando, FL.

Jose, I.J., LaPort, K.A., & DeCostanza, A.H. (2011, August). *Commitment profiles and attrition in the United States Army.* Poster presented at the 119th Annual Convention of the American Psychological Association (APA), Washington, DC.

Legree, P.J. (2010, April). Situational Judgment Tests (SJTs). Poster session presented at the 26th Annual Conference of the Society of Industrial Organizational Psychology (SIOP), Chicago, IL.

Roan, L., Metcalf, K., Gehlbach, H., & Young, L. (2010, November). *Perspective taking: Description of a curriculum and summative evaluation findings with Army Soldiers.* Poster session presented at the 27th Army Science Conference, Orlando, FL.

Stewart, J.E., & Bink. M.L. (2011, May). *Identifying Training Gaps in RQ-7B Shadow: A U.S. Army Unmanned Aircraft System*. Poster presented at 16th meeting of International Symposium on Aviation Psychology, Dayton, OH.

Tannenbaum, S., Donsbach, J., Alliger, G. M., Mathieu, J. E., Metcalf, K. A., & Goodwin, G. F. (2010, November). *Forming effective teams: Testing the Team Composition System (TCS) algorithms and decision aid*. Poster presented at the 27th Army Science Conference, Orlando, FL.

Vaughn, E. D., Tucker, J., & Pleban, R. J. (2011, April). *Individual adaptability predicts performance in a dynamic training environment*. Poster presented the 26th Annual Society for Industrial and Organizational Psychology Conference (SIOP), Chicago, Il.

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